

## ABSTRACT

A dedicated, optimized, secure and private apparatus, system and method is provided for service providers to dynamically share the resources of a single packet services node within a telecommunications network. The apparatus, method and system uses real-time  
5 dynamic software partitioning, with low-level dynamic hardware reconfiguration and adaptation, to enable real-time network, software and hardware resource allocation. The packet services node is configured as a unified and integrated switch (UIS) that can be segmented into a number of logical communication nodes (LCN). Each LCN operates as a secure, independent, private and dynamically configured packet services node. A master  
10 controller is responsible for the allocation of resources to LCNs based on resource availability and/or a predefined resource allocation configuration between the operator of the UIS and the user of the LCN.